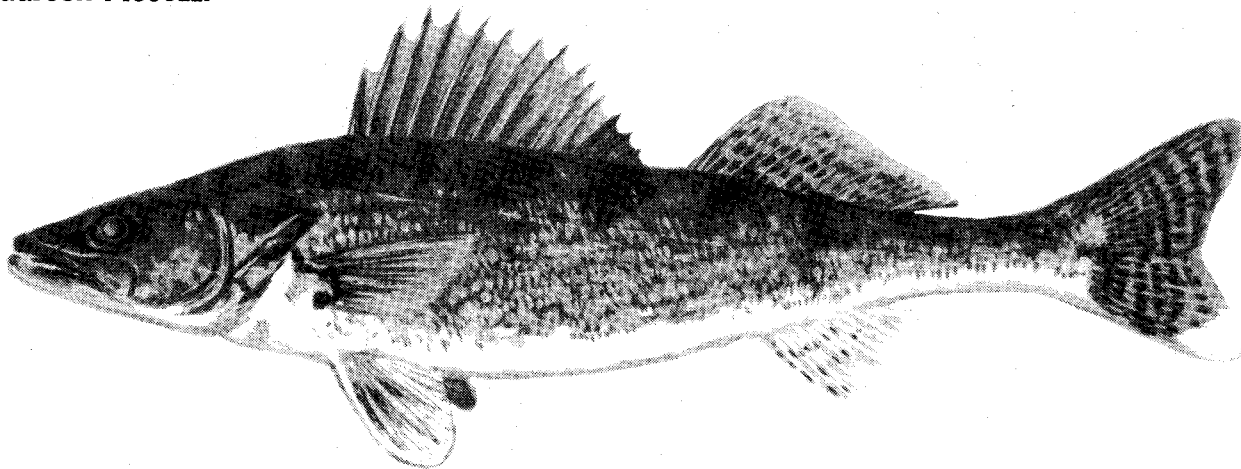


WALLEYE

(*Stizostedion vitreum vitreum*)

By Maureen Mecozzi



Common Names

Walleye, walleyed pike, yellow pike, grass pike, glasseye, perchpike, dory, jack.

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Those who are acquainted with the wall-eyed pike as a food fish hold it in very high esteem.

— David Starr Jordan and
Barton Warren Everman,
American Food & Game Fishes, 1902

There is no better human bait than a plate of fresh walleye fillets dipped in a light beer batter and deep-fried to a golden crispness. In the evening, especially on Fridays, the Wisconsin subspecies of *Homo sapiens* feeds heavily on this fish — and even those humans who claim their pursuit of the walleye is just for sport can hardly wait until Ol' Marble Eyes is off the hook and on the fork.

The delicate, subtle flavor of walleye accounts for the species' great popularity with the human race. Walleye flesh is not fatty and contains little oil — the source of pungent "fishy" odors and flavors common in other fish. With 0.5% fat in an average serving, the walleye is a dieter's dream. Fresh walleye fillets freeze well and can be kept for long periods of time without loss of flavor or texture.

While fishing surveys show that the walleye is Wisconsin's most popular sport fish, don't get the idea that it's an easy one to catch: Expect to spend at least eight hours on the water for every walleye in the pan. The crafty walleye has been known to stymie anglers with its moody feeding habits and a seeming lack of preferred (and thus easily identifiable) habitat. But the angler willing to devote some time to the study of walleye on one of Wisconsin's fine lakes or rivers will find that diligence is often handsomely rewarded.

Identification

The walleye is the largest member of the perch family (Percidae) in North America, a group that includes sauger, darters and, of course, yellow perch. It is not a pike — a misconception undoubtedly spawned by the sharp, strong **canines** (conical, pointed teeth) that line the walleye's large lower jaw and resemble the teeth of the northern pike and muskellunge.

These slender fish vary greatly in overall body color, depending on the clarity and color of their home waters. Generally, the upper body has a metallic bronze or brass tone shaded by an olive

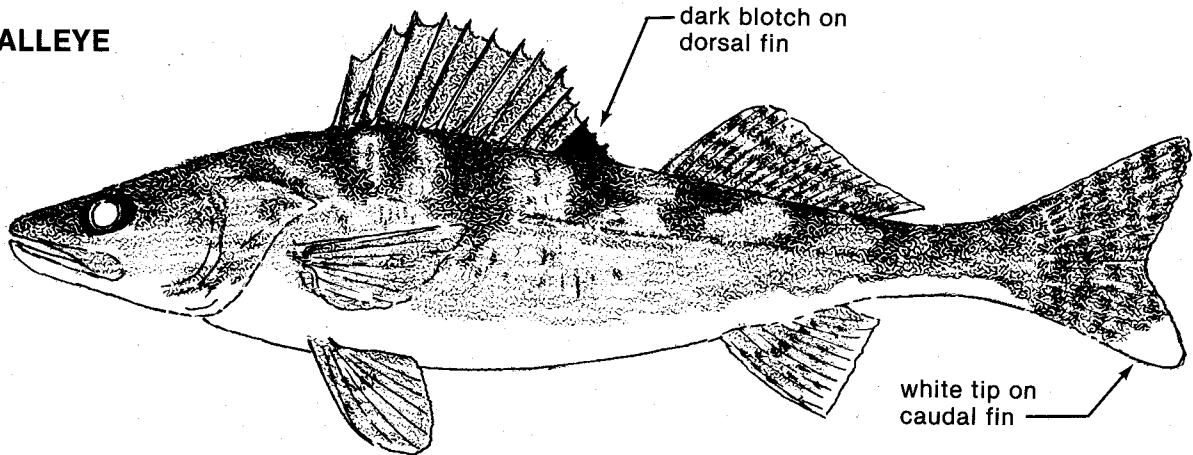
yellow color and is mottled all over with black; on the side, the mottling is concentrated into irregularly-shaped vertical blotches. The belly is white.

The body is covered with sandpaper-like **ctenoid scales** (scales with a row or rows of small teeth on the exposed edge) and the gills are surrounded by firm, sharp bones that can cut careless handlers. The large anterior, or **first spinous dorsal fin** (on the back closest to the head) has a scalloped edge and is supported by strong spines; the second dorsal fin is soft-rayed and lines up almost exactly with the **anal** (on the

the belly behind the vent) **fin**. The **caudal** (tail) **fin** is moderately forked and has rounded tips. Look for the dark blotch in the lower back corner of the first dorsal fin and a white tip on the lower half of the caudal fin to distinguish the walleye from its close relative, the sauger (Fig. 1).

The species' distinctive eyes — those silvery opaque marbles that glow in the dark, bulging right out of their sockets — have startled more than one night-fishing angler. The reflection is caused by the **tapetum lucidum**, a light-sensitive membrane in the eye.

WALLEYE



SAUGER

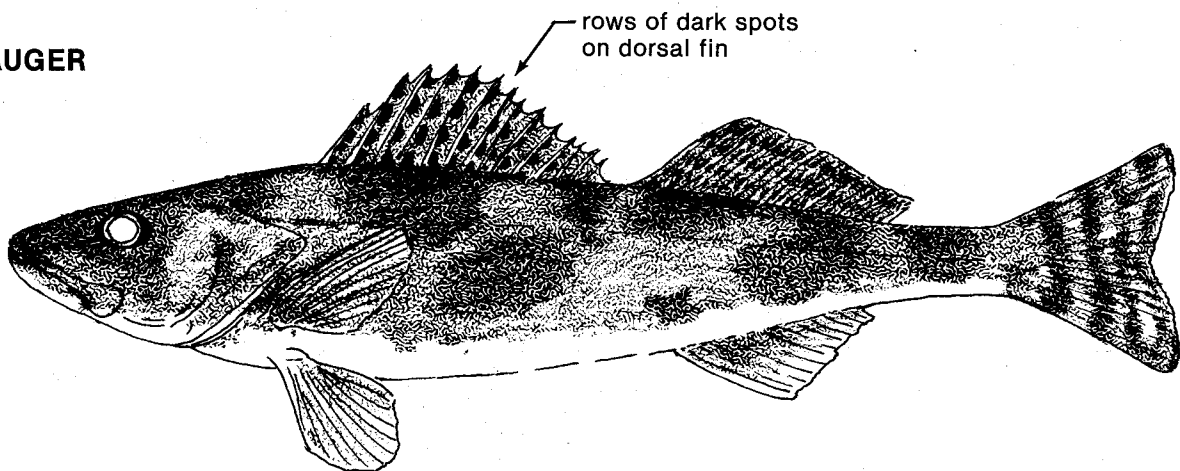


Figure 1. Identification between walleye and its close relative the sauger. (For more information about sauger, refer to the factsheet "Sauger").

Distribution

The walleye was originally confined to Wisconsin's larger rivers and lakes, but extensive stocking has spread the species widely across the state. The central and lower portions of the Wisconsin River, the Mississippi River, the Fox and Wolf River basins and their connecting lakes, and the lakes "up north" in Wisconsin's resort country are notable walleye waters. Tributaries draining into Lake Superior sustain small populations of walleye (Fig. 2).

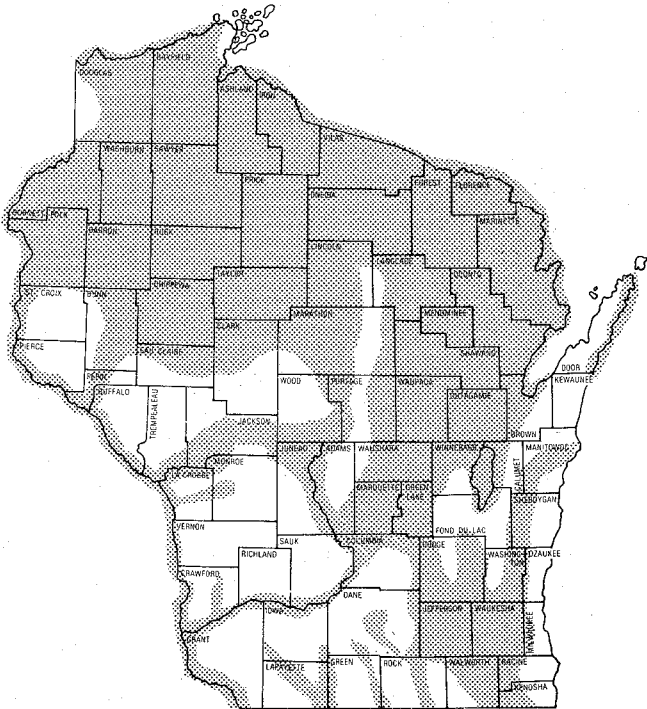


Figure 2. Generalized distribution of walleye in Wisconsin.

Habits and Habitat

The walleye is generally associated with large rivers and lakes, although excellent populations are sometimes found in smaller, landlocked lakes; many large impoundments also contain substantial walleye populations. Walleyes can be found in all types of lakes: **dystrophic**, or bog lakes; **oligotrophic**, or clear, softwater lakes; and **eutrophic**, or fertile, hardwater lakes.

Walleyes live near or on the lake bottom and travel through open water in loosely formed schools. Because their eyes are highly sensitive to light, walleye linger in deeper, darker water during the day and move to shallower water near bars, shoals and weed beds to feed as the sun sets. The fish may be active in the daytime if the water is muddy or the sky is cloudy. In midsummer,

walleye will remain in deep, cool water and seek their prey in the depths; the species also feeds actively throughout the winter, especially when the ice first forms and just before spring break-up.

Walleye are nocturnal predators that feed on unwary, often resting fish. Bullheads, freshwater drum, yellow perch, darters and minnows are favorite walleye prey; crayfish, insects and worms round out the diet. Walleyes are vigorous swimmers and will follow the food supply rather than wait for a midnight snack to drift into range; they seldom congregate in any particular spot for long, a fact which confounds even the most astute of walleye anglers.

Life cycle

Between mid-April and early May, walleye migrate to wind-swept, rocky shorelines, flooded wetlands or inlet streams with gravel bottoms to spawn. The fish may travel long distances during the migration — Lake Winnebago walleye, for instance, may swim 100 miles up the Wolf River before they reach suitable spawning habitat.

Males are the first to arrive at the spawning ground, outnumbering the females by 7 to 1. When a **ripe** (sexually mature) female enters the area, usually in shallow water 4 or less feet deep, she will be approached by one or several males. The fish push each other backward with their snouts, raising and flattening the first dorsal fin as they push. This activity is repeated until the males and female rush upward in a tight group and begin to swim vigorously. The female is then turned or pushed onto her side by the males and deposits her eggs while the males release their **milt** (sperm). The female walleye will lay an average of 50,000 eggs and generally spawns out completely in one night. The adults provide no protection for the eggs.

The eggs hatch in 26 days at 40°F, in 21 days at 50-55°F, and in 7 days at 57°F. Once hatched, the **fry** (newborn fish) must reach a food source within three to five days or they will perish. Because their paired fins are not fully developed at this time, the fry can only swim vertically and must rely on the current to carry them into areas where they can feed on **zooplankton** (microscopic aquatic animals) and later, insects larvae and fish.

Female walleyes grow faster and become larger than males. The males reach maturity in two or three years, when they are 12 to 13.5 inches long; females mature in four to five years, at lengths of 15 to 17 inches (Fig. 3). On average, walleyes live to be about seven years old, but older specimens have been caught.

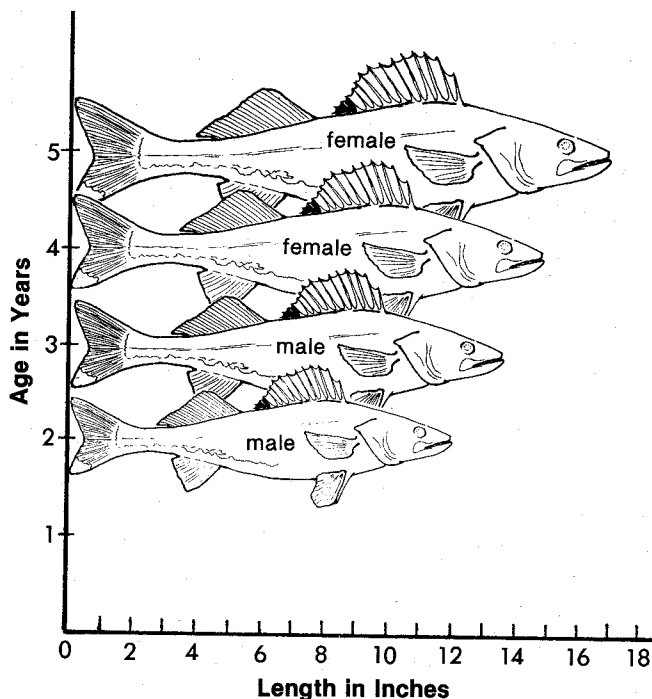


Figure 3. Comparison between males and females at maturity.

Age (years)	Length (inches)	Weight
1	5	0.7 oz.
2	10	5.4 oz.
3	14	1.45 lbs.
4	19	2.14 lbs.
5	21	4
6	23	5.2
7	26	6

Young walleye are preyed upon by all fish-eating species, but the walleye and yellow perch have a special relationship. Each species preys on the other at different times in the lifecycle: Large walleyes feed on yellow perch, while yellow perch feed on walleye fry. If too many adult walleye are caught from a body of water, the yellow perch population increases from lack of predation. The yellow perch become stunted as they compete for a limited quantity of food — and few young walleye survive the extreme predation pressure to reach adulthood and reproduce. (Fig. 4)

THE PREDATOR — PREY RELATIONSHIP

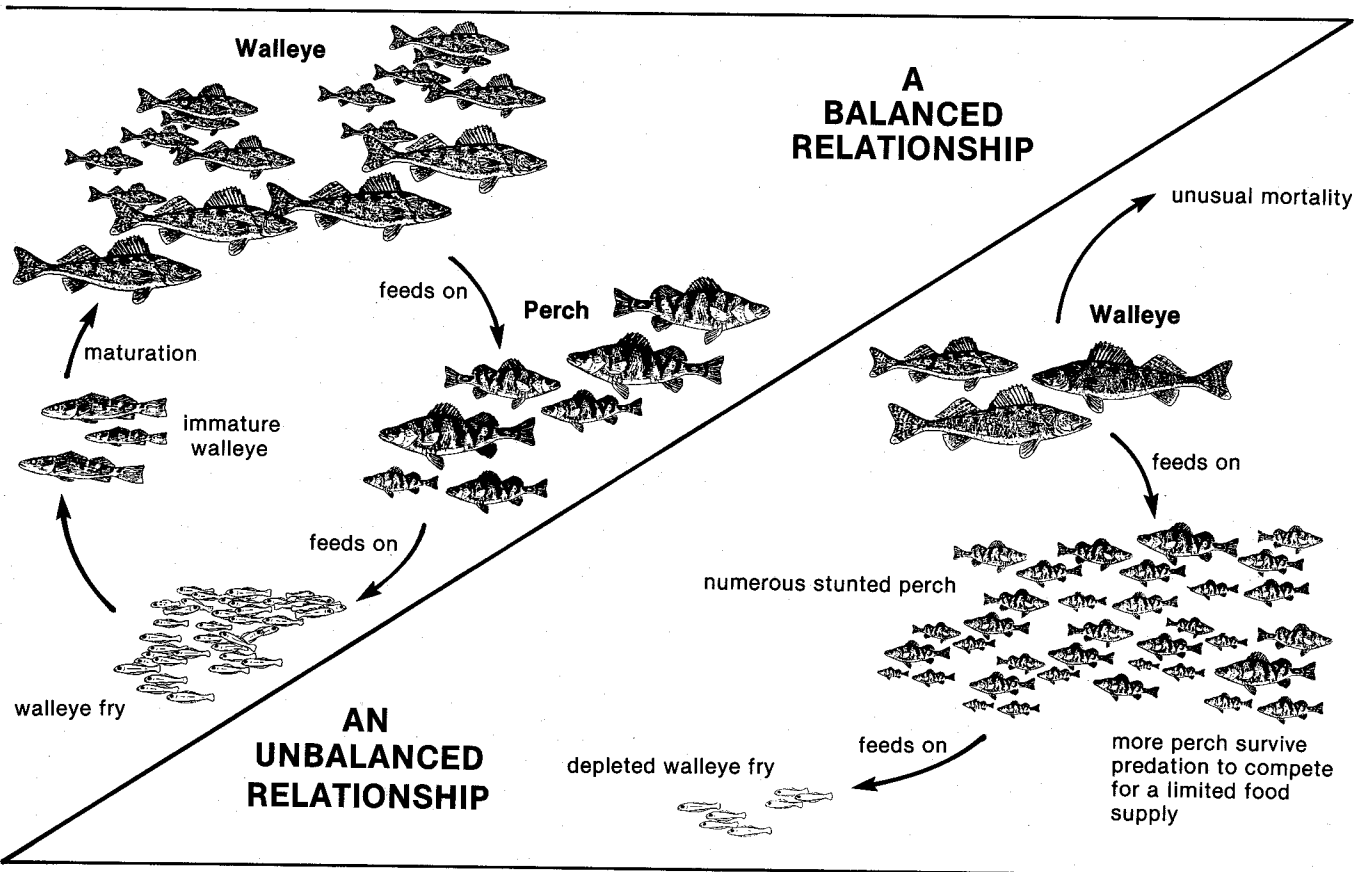


Figure 4. A balanced relationship is the preferred and more beneficial both to the fish and to man.

Fishing for walleye

The serious angler will kiss sleep and a suntan goodbye to pursue walleye: Dawn, dusk and after dark in May, June and October are the best times to fish for this underwater night owl. The average catch weighs about one and one-half pounds; walleye that tip the scales at 10 pounds plus in Wisconsin are rare. However, on some starless night dark enough to hide a raven, when the moon is cloaked by clouds and you can't see past your own nose, you could hook a chubby walleye like the 18-pound Wisconsin record holder pulled from High Lake in Vilas County in 1933, or the portly 25-pound world-record walleye caught in Tennessee in 1960. Suspense, after all, is what makes sport fishing so thrilling!

Some anglers advocate still fishing from an anchored boat with live bait; others recommend trolling with spinners, drifting with the wind or current. (Traditional Wisconsin anglers will tell you that trolling for walleye with Wolf River rigs and Little John spinners is the only way to go.) Try fly casting with streamer flies or poppers on quiet, calm nights near the edges of rocky bars or weed beds. Bait-cast with minnows, worms, nightcrawlers, spoons and plugs. Ice fish with tipups or jigs. In other words, there are a lot of different ways to catch walleye — and you just might have to try them all if you want to be successful (Fig. 5).

Keep the lure or bait near the bottom and reel it in slowly — walleye are slow, deliberate biters and it's best to give them a chance to swallow the bait before setting the hook. Although walleyes are not spectacular fighters, they will put up a steady battle, always pulling for the bottom.

Wisconsin is famous for the walleye spawning runs out of the Winnebago system into the Wolf River and up part of the Wisconsin River from the flowages. The fish bite readily at this time and are likely to reward even the unluckiest of anglers with a nibble. Anglers should note that the quality of walleye fishing will vary from year to year. Successful walleye populations depend on spring flooding of spawning grounds; dry spring weather will have an adverse effect on the hatch for that year.

Not all walleyes go from the boat to the frying pan. More and more anglers are catching on to "catch and release" — releasing walleyes less than 15 inches long so that they can grow to adulthood and reproduce. It's a great way to keep the walleye population healthy and hone your angling skills. Don't land the fish; reel it in next to the side of the boat and gently remove the hook, or cut the hook off with a wire cutter. If the hook was swallowed, simply cut the line and let the fish go. The hook will gradually disintegrate.

Large, older walleyes destined for the dinner table should be eaten with caution: They may be contaminated with PCBs (polychlorinated biphenyls), pesticides or mercury. Walleyes accumulate these toxins in their bodies as they feed on smaller fish which contain trace amounts of contaminants. DNR publishes a Fish Consumption Advisory every six months listing waters that contain walleye unsafe to eat.

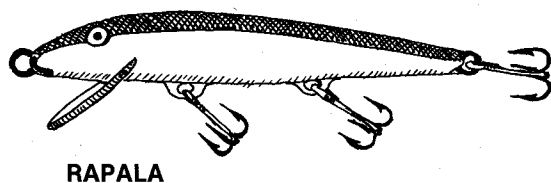
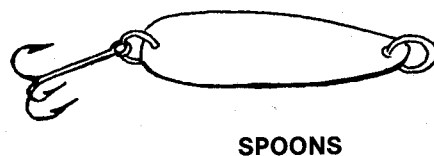
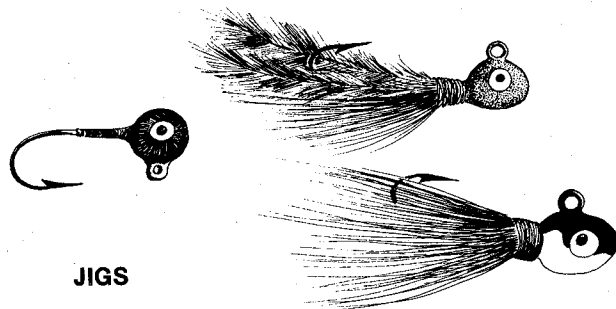
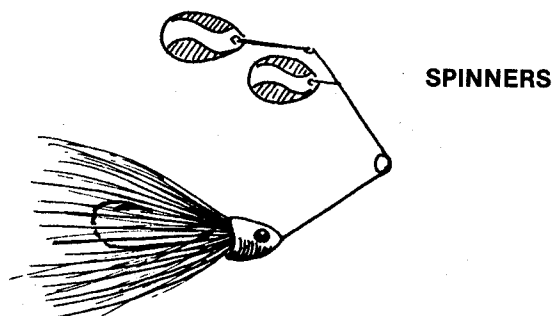
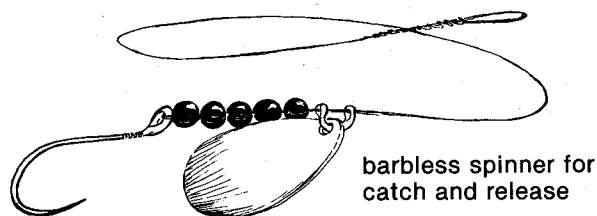


Figure 5. Some examples of the many kinds of baits used to catch walleye.

Management practices

Anglers hook 25 to 35 percent of the entire adult walleye population every year. To keep enough walleye in the water, DNR stocks 50 million to 80 million walleye fry and about 3 million walleye fingerlings (young fish 2 to 5 inches long) into state lakes and rivers every year — enough to secure the walleye's place as the species most extensively propagated in Wisconsin. Spawning reefs have been constructed in some waters to increase natural reproduction (Fig. 6).

For information on bag limits, legal size and seasons for walleye, pick up a copy of Wisconsin's fishing regulations at the nearest DNR office.

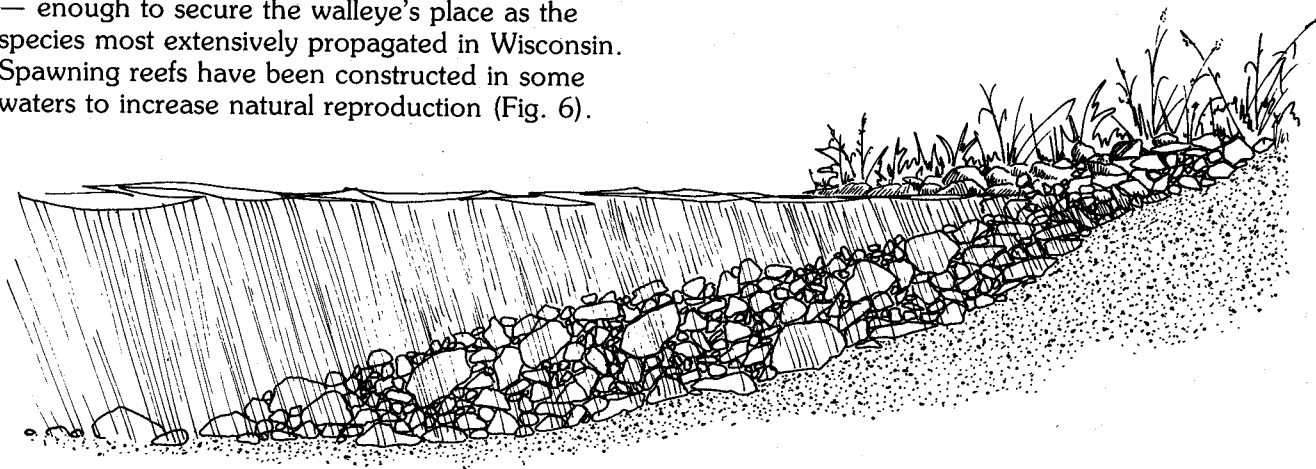


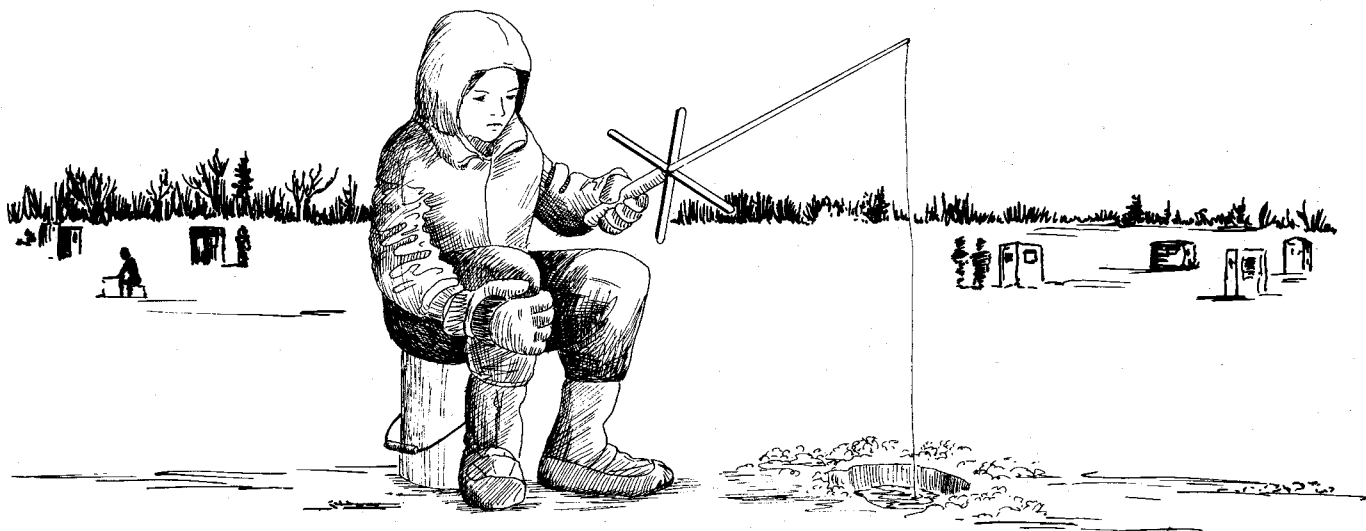
Figure 6. Spawning reef constructed with rocks and stones of a specific size and with a designated slope.

Environmental concerns

Walleye populations are decreasing in lakes choked by excessive weed growth — a result of soil and fertilizer run-off from farmland and fertilizer run-off from lawns. Siltation and pollution must be controlled to prevent further erosion of walleye waters.

Additional reading

Becker, George C. **Fishes of Wisconsin**, University of Wisconsin Press, Madison, 1983
Herald, Earl S. **Fishes of North America**, Doubleday & Co., New York, 1979.



Ice fishing for walleye is a popular winter sport.